REMARKS

At the outset, appreciation is expressed to Examiner Byrd for her time and attention during the August 11, 2011 initial interview with the undersigned, and to Supervisor Newhouse for his time and attention during the August 11, 2011 initial interview and the October 13, 2011 follow-up exchange of telephone messages with the undersigned. The substance of these communications is reflected in the following remarks.

During the initial interview, the undersigned requested clarification concerning the Examiner's understanding of JP9-290852, hereinafter the Japanese reference. In particular, it was evident that the Examiner relied on JP9-290852 based on the belief that it disclosed or taught a tearing line which extends essentially from a pouring opening towards an interface between a first portion and a second portion and essentially along an entirety of the interface, as recited in Claim 1, a tearing line extending essentially from an interface to a part of a first portion which is exposed as a free edge when a lid is at least partially removed, and also extending essentially along an entirety of the interface, as recited in Claim 19, and a tearing line extending essentially from a weakening line to an interface, and also extending essentially along an entirety of the interface, as recited in Claim 21.

During the interview, the Examiner explained that she believed Fig. 5 of the Japanese reference illustrated a tearing line extending from an opening (at the top of the tube 5 of the container illustrated in Fig. 5), and then along an interface between two parts (along the base of tube 5 and passing through elements 7a and 7b). The Examiner explained that the basis for this belief, despite the lack of an illustration of a dashed line along the base of tube 5 in Fig. 5, is that a dashed line, representing a

tearing line, is illustrated in Figs. 2, 3, 4 and 6 along the base of tube 5, and that this dashed line is labelled with elements 7a and 7b. The Examiner therefore concluded that a tearing line must also exist in the Fig. 5 embodiment along the base of tube 5.

Following the initial interview, Applicants obtained a human translation into English of the Japanese reference. A copy of the translation is appended to this response for the Examiner's convenience.

As discussed in lines 29-31 on page 9 of the translation, elements 8a and 8b are weakened lines on upper wall 11 which join to end parts 7a, 7b of weakened line 7. This weakened line 7 is provided in different locations in the various embodiments. In particular, as discussed in lines 18 and 19 on page 9, in the Fig. 5 embodiment, by contrast to other embodiments, the weakened line 7 is formed on the tube 5 itself. It is furthermore apparent from a study of Fig. 5 that, although the number 7 is not illustrated on Fig. 5, the weakening line 7 in this embodiment is composed of the two lines which extend down the tube 5. In summary, in the embodiments of Figs. 2, 3, 4 and 6, the weakening line 7 is located along the base of the tube, while in the embodiment of Fig. 5, the weakening line 7 is composed of the two lines which extend down the tube 5.

It should therefore be clear in light of the foregoing that the Japanese reference does not contemplate a single embodiment in which a weakening line extends down the tube 5 as well as along the base of the tube 5. From this, it is also clear that the Examiner's assertions set forth during the initial interview are not supported by that which is actually disclosed in the Japanese reference.

After studying the translation, the undersigned conducted the follow-up exchange of messages with Supervisor Newhouse, during which Supervisor

Newhouse suggested that the undersigned file a response providing a copy of the human translation and explaining why the assertions set forth during the initial interview are unsupported by the disclosure in the Japanese reference. The present response has been filed in accordance with Supervisor Newhouse's suggestion.

In light of the foregoing explanation and the appended translation, it should be clear that the rejections set forth in the May 12, 2011 final Office Action are unsupported by that which is actually disclosed in the Japanese reference. Withdrawal of those rejections is therefore respectfully requested.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

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(54) [Title of the Invention] Inner stopper for container

(57) [Abstract]

[Issue] To provide an inner stopper for a container, which is fitted to the mouth part of the container in the form of a cap, wherein the inner stopper can be very easily removed from the container when the container and/or the inner stopper are/is recycled.

[Means of Resolution] A synthetic resin inner stopper 6 comprising a latching protrusion 4 which latches onto an engaging protrusion 3 on a mouth part 2 of a container 1, and further comprising a pouring tube 5, wherein a weakened line 7 having two corresponding end parts 7a, 7b and surrounding the pouring tube 5 is formed at the outer side of the pouring tube 5, and weakened lines 8a, 8b running downwards and outwards join to the two corresponding end parts 7a, 7b, at least one of the weakened lines 8a, 8b vertically intersecting the latching protrusion 4.

[Patent Claims]

[Claim 1] Inner stopper 6 for a container, comprising a latching protrusion 4 which latches onto an engaging protrusion 3 formed on the outer periphery of a mouth part 2 of a container 1, and further comprising a pouring tube 5, characterized in that a weakened line 7 having two corresponding end parts 7a, 7b and surrounding the pouring tube 5 is formed at the outer side of the pouring tube 5, and weakened lines 8a, 8b running downwards and outwards join to the two corresponding end parts 7a, 7b, at least one of the weakened lines 8a, 8b vertically intersecting the latching protrusion 4.

[Claim 2] Inner stopper for a container according to Claim 1, in which the weakened line 7 is formed on a base part 10 of the pouring tube 5 or in the region thereof.

[Claim 3] Inner stopper for a container according to Claim 1, in which the weakened line 7 is formed on an upper wall 13 of the inner stopper 6 which joins an outer tube 11 and an inner tube 12.

[Claim 4] Inner stopper 6 for a container, comprising a latching protrusion 4 which latches onto an engaging protrusion 3 formed on the outer periphery of a mouth part 2 of a container 1, and further comprising a pouring tube 5, characterized in that two weakened lines 7 formed with two corresponding lower end parts 7a, 7b are formed in the vertical direction of the pouring tube 5, and weakened lines 8a, 8b running downwards and outwards join to the two corresponding end parts 7a, 7b, at least one of the weakened lines 8a, 8b vertically intersecting the latching protrusion 4.

[Claim 5] Inner stopper for a container according to Claim 3 or 4, in which an intersection 9 is present in two locations.

[Claim 6] Inner stopper for a container according to Claim 1, 2, 3, 4 or 5, in which the pouring tube 5 is formed with a hole 15 in a side wall 14 of said pouring tube 5.

[Claim 7] Inner stopper for a container according to Claim 1, 2, 3, 4, 5 or 6, in which an upper outer peripheral part 16 of the pouring tube 5 is formed with a larger diameter than that of a lower outer peripheral part 17.

[Claim 8] Inner stopper for a container according to Claim 1, 2, 3, 4, 5, 6 or 7, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be smaller than the maximum width 7d of the weakened line 7.

[Claim 9] Inner stopper for a container according to Claim 1, 2, 3, 4, 5, 6, 7 or 8, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be smaller than the width 8c between the ends of the two weakened lines 8a, 8b.

[Claim 10] Inner stopper for a container according to Claim 1, 2, 3, 4, 5, 6, 7 or 8, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be greater than the width 8c between the ends of the two weakened lines 8a, 8b.

[Claim 11] Inner stopper 6 for a container according to Claim 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10, which comprises, on the inner side of the pouring tube 5, a blocking wall 19 for blocking the passage of the content of the container 1, in which an endless tearing groove 18 is formed, and a tearing member 20 is provided in the blocking wall 19.

[Detailed Description of the Invention]

[0001]

[Technical Field of the Invention] The present invention relates to an inner stopper for a container, which is fitted to the mouth part of a container such as a bottle for use.

[0002]

[Prior Art] Many inner stoppers for containers are formed in the manner shown in Figure 10. This figure shows a conventional example of an inner stopper for a container, and since there are many common features with the present invention, those portions will be described using the same reference symbols in the figures. Accordingly, in the drawings according to the present invention and the conventional example, elements denoted by the same reference symbols have the same name and the same function. In the figures, 1 is a container, 2 denotes the mouth part thereof, and a vertical engaging protrusion 3 is formed on the mouth part 2. 6 is an inner stopper which is formed from synthetic resin and has a fitting part 22 for fitting to the container 1, which comprises an outer tube 11, an inner tube 12 and an upper wall 13. 4 is a latching protrusion of the inner stopper 6 which vertically latches onto the engaging protrusion 3. 23 denotes a holding part for holding an outer lid 24. 5 is a pouring tube, 19 is a blocking wall for blocking the passage of fluid, and 21 is a tearing part comprising an endless tearing groove 18 formed in the blocking wall 19, a pull-ring tearing member 20 being provided in the tearing part 21. 25 denotes a connecting part and 26 denotes a projection. A user such as a consumer who uses this assembly removes the outer lid 24, then pulls the tearing member 20 upwards to split the tearing groove 18 and form a passage, and pours out the fluid which is the product content (not depicted) of the container 1.

[0003]

[Issue to be Resolved by the Invention] However, the following problem is encountered with the abovementioned inner stopper 6. This problem arises when the container 1 or the inner stopper 6 is to be recycled. The container 1 and the inner stopper 6 are normally made of different materials so they have to be separately recycled, but the latching protrusion of the inner stopper 6 is vertically latched onto the engaging protrusion 3 of the container 1 in the manner described above, and therefore it cannot be easily removed from the mouth part 2. The present invention has been devised in order to resolve such a problem, and the object thereof lies in providing an inner stopper for a container, which is fitted to the mouth part 2 of the container 1 in the form of a cap, as described above, in other words an inner stopper for a container in which the latching protrusion 4 of the inner stopper 6 vertically latches onto the engaging protrusion 3 of the container 1, wherein the inner stopper 6 can be very easily removed from the mouth part 2 of the container 1 when the container 1 and/or the inner stopper 6 are/is recycled.

[0004]

[Means of Resolving the Issue] The present invention which is intended to achieve the above object can be described as follows: An inner stopper 6 for a container, comprising a latching protrusion 4 which latches onto an engaging protrusion 3 formed on the outer periphery of a mouth part 2 of a container 1, and further comprising a pouring tube 5, characterized in that a weakened line 7 having two corresponding end parts 7a, 7b and surrounding the pouring tube 5 is formed at the outer side of the pouring tube 5, and weakened lines 8a, 8b running downwards and outwards join to the two corresponding end parts 7a, 7b, at least one of the weakened lines 8a, 8b vertically intersecting the latching protrusion 4. Furthermore, an inner stopper for a container, in which the weakened

line 7 is formed on a base part 10 of the pouring tube 5 or in the region thereof. Furthermore, an inner stopper for a container, in which the weakened line 7 is formed on an upper wall 13 of the inner stopper 6 which joins an outer tube 11 and an inner tube 12. Furthermore, an inner stopper 6 for a container, comprising a latching protrusion 4 which latches onto an engaging protrusion 3 formed on the outer periphery of a mouth part 2 of a container 1, and further comprising a pouring tube 5, characterized in that two weakened lines 7 formed with two corresponding lower end parts 7a, 7b are formed in the vertical direction of the pouring tube 5, and weakened lines 8a, 8b running downwards and outwards join to the two corresponding end parts 7a, 7b, at least one of the weakened lines 8a, 8b vertically intersecting the latching protrusion 4.

[0005] Furthermore, an inner stopper for a container, in which an intersection 9 is present in two locations. Furthermore, an inner stopper for a container, in which the pouring tube 5 is formed with a hole 15 in a side wall 14 of said pouring tube 5. Furthermore, an inner stopper for a container, in which an upper outer peripheral part 16 of the pouring tube 5 is formed with a larger diameter than that of a lower outer peripheral part 17. Furthermore, an inner stopper for a container, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be smaller than the maximum width 7d of the weakened line 7. Furthermore, an inner stopper for a container, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be smaller than the width 8c between the ends of the two weakened lines 8a, 8b. Furthermore, an inner stopper for a container, in which the width 7c between the two corresponding end parts 7a, 7b of the weakened line 7 is formed to be greater than the width 8c between the ends of the two weakened lines 8a, 8b. Furthermore, an

inner stopper 6 for a container, which comprises, on the inner side of the pouring tube 5, a blocking wall 19 for blocking the passage of the content of the container 1, in which an endless tearing groove 18 is formed, and a tearing member 20 is provided in the blocking wall 19.

[0006]

[Mode of Embodiment of the Invention] In Figures 1 and 2, 1 is a container which is a synthetic resin bottle, for example. However, it may of course equally be a glass bottle. An annular engaging protrusion 3 is formed on the outer periphery of a mouth part 2 thereof. 6 is a synthetic resin inner stopper formed from polyethylene or polypropylene etc., for example, and it has, at the lower part thereof, a fitting part 22 for fitting to the mouth part 2, which comprises an outer tube 11, an inner tube 12 and an upper wall 13. However, if the container 1 is a box or a can etc., the fitting part 22 is formed in the shape of a flange, unlike the in the case above. A latching protrusion 4 which latches onto the engaging protrusion 3 is then formed on the outer tube 11. It can be understood that this allows the inner stopper 6 to be fitted to the container 1 in the form of a cap. 5 is a pouring tube formed in the inner stopper 6, said pouring tube 5 being formed with an upper outer peripheral part 16 which is greater in diameter than a lower outer peripheral part 17. That is to say, the pouring tube 5 is trumpet-shaped. However, it may equally be formed as a straight tube, and the present invention includes both shapes. 19 is a blocking wall for blocking the passage of a liquid, powder etc. product (not depicted) inside the container 1, which is formed on the inner side of the pouring tube 5; 18 is an endless tearing groove which is formed in the blocking wall 19; 21 is a tearing part which is formed on the inner side of the tearing groove 18; and 20 is a tearing member which is provided above the tearing part 21. Furthermore, 23 is

a holding part for holding an outer lid 24, and is formed in the shape of a threaded tube, for example, so as to screw together with the synthetic resin outer lid 24. However, the holding part 23 may be provided in the form of an engagement, as shown in Figure 9, rather than in the form of a screw, and the present invention includes both cases. In Figure 9, the holding part 23 forms a locking part which locks together with a locked part 24a of the outer lid 24. It should be noted that in this case, the pouring tube 5 is provided on the upper wall 13. 25 denotes a hinge.

[0007] In Figures 1 and 2, 7 is a weakened line which is formed so as to be readily torn, and in the construction shown in these figures, the weakened line 7 is formed at the base part 10 of the pouring tube 5; the weakened line 7 may be formed on the upper wall 13, as shown in Figures 3, 4, and 9, or it may be formed on the pouring tube 5, as shown in Figure 5; the weakened line 7 is a section which is formed in such a way as to be readily torn when pulled by application of an axial force to the pouring tube 5 or a force in the direction intersecting the axial direction thereof, as required, and in the example shown in Figures 1 and 2, the weakened line 7 is formed as a thin region on the outer side of the inner stopper 6. However, the weakened line 7 may be formed as a thin region on the inner side of the inner stopper 6, as shown in Figures 3 and 4 etc. 8a and 8b are weakened lines which extend outwards joining to the corresponding end parts 7a, 7b of the weakened line 7, and are formed as thin regions on the inner side of the inner stopper 6 in the same way as the weakened line 7; the end 26 thereof forms a vertical intersection 9 with the latching protrusion 4, as shown in Figures 1 and 9. The weakened line 7 may be formed with an intersection 9 in two locations, as shown in Figures 2, 3, 6 and 7, or the intersection 9 may be formed in a single location, as shown in Figures 4, 5 and 8.

[0008] In the construction shown in Figure 6, a hole 15 is provided in the side wall 14 of the pouring tube 5, and a grip part 27 is formed thereabove. In this case, the weakened line 7 is torn by gripping the grip part 27 and pulling it in the axial direction or the direction intersecting the axial direction, and the weakened lines 8a, 8b are then formed so as to both be torn. When the inner stopper 6 having the above construction is used, the outer lid 24 is removed and the tearing member 20 is pulled so as to tear the tearing groove 18, where a passage is then formed. By adopting this construction in the present invention, the pouring tube 5 can serve as a pouring tube 5, while the region 5a of the pouring tube 5 on the opposite side to the weakened lines 8a, 8b can act as a handle part for tearing the weakened line 7 and the weakened lines 8a, 8b in a continuous manner.

[0009] The pouring tube 5 is easy to grip because it is provided projecting upwards in such a way as to allow a liquid to be poured therethrough, and the weakened line 7 and the weakened lines 8a, 8b can be torn in a continuous manner by pulling the region 5a of the pouring tube 5 on the opposite side to the weakened lines 8a, 8b upwards or obliquely upwards using a finger or pliers etc.; the latching protrusion 4 can also be torn apart in this single series of operations, and in this way it is possible to easily loosen the latching of the latching protrusion 4 and the engaging protrusion 3, so the inner stopper 6 can be removed from the container 1 without any other operations. That is, the single operation of pulling the region 5a makes it possible to remove the inner stopper 6 very easily from the container 1. Specifically, the whole process of removing the inner stopper 6 can be completed in a single operation. Moreover, as shown in Figure 7, with the construction in which the upper outer peripheral part 16 of the pouring tube 5 is formed to have a

larger diameter than that of the lower outer peripheral part 17, the end part 5a on the opposite side to the weakened lines 8a, 8b is easily caught with a finger, and can therefore be reliably gripped, and it is simple to apply a pulling force obliquely upwards, that is, substantially at right-angles.

[0010]
[Advantages of the Invention] By adopting the construction according to Claim 1 of the present invention, the pouring tube 5 can serve as a pouring tube 5, while the region 5a of the pouring tube 5 on the opposite side to the weakened lines 8a, 8b can act as a handle part for tearing the weakened line 7 and the weakened lines 8a, 8b in a continuous manner. The pouring tube 5 is easy to grip because it is provided projecting upwards in such a way as to allow a liquid to be poured therethrough, and the weakened line 7 and the weakened lines 8a, 8b can be torn in a continuous manner by pulling the region 5a of the pouring tube 5 on the opposite side to the weakened lines 8a, 8b upwards or obliquely upwards using a finger or pliers etc.; the latching protrusion 4 can also be torn apart in this single series of operations, and in this way it is possible to easily loosen the latching of the latching protrusion 4 and the engaging protrusion 3, so the inner stopper 6 can be removed from the container 1 without any other operations. That is, the single operation of pulling the region 5a makes it possible to remove the inner stopper 6 very easily from the container 1. Specifically, the whole process of removing the inner stopper 6 can be completed in a single operation.

[0011] With the invention according to Claim 2, the weakened line 7 is formed at the base part 10 of the pouring tube or in the region thereof, so the force applied to the pouring tube 5 is directly transmitted to the base part 10 or the region thereof and the

stress can be concentrated in that place, so tearing of the weakened line 7 can be easily initiated. In the invention according to Claim 3, the assembly in which the weakened line 7 has been torn by gripping of the pouring tube 5 has a relatively large mass while the weakened lines 8a, 8b are relatively short, and it is simple to exert a force on the weakened lines 8a, 8b at the latching protrusion 4 region, so the latching protrusion 4 can be easily intersected.

[0012] In the invention according to Claim 4, each of the weakened lines 7 can be formed to be short in length and the weakened lines 7 and the weakened line 8a or 8b can be formed continuously in the same direction, so the whole process can be completed by a tearing operation in one direction. In the invention according to Claim 5, the intersections 9 are formed in two locations, so the latching of the latching protrusion 4 on the engaging protrusion 3 can be weakened and the inner stopper 6 can be removed from the container 1 with a great deal of ease. In the invention according to Claim 6, a force can be applied to the pouring tube 5 or tearing of the weakened line 7 can be easily initiated by placing a finger in the hole 15 formed in the side wall 14 of the pouring tube 5 and gripping the grip part 27 above the hole 15. In the invention according to Claim 7, the upper outer peripheral part 16 of the pouring tube 5 is formed to have a larger diameter than that of the lower outer peripheral part 17, which means that it is possible to efficiently apply a force reliably and substantially at right-angles to the pouring tube 5 without the finger sliding when the operation to pull the pouring tube 5 obliquely upwards is carried out. In the invention according to Claim 8, the force for tearing the section of maximum width of the weakened line 7 can be concentrated on the end parts 7a, 7b where the width is smaller than the maximum width, and therefore the tearing can be effectively and smoothly transferred

from the weakened line 7 to the weakened lines 8a, 8b. In the invention according to Claim 9, the tearing gap at the latching protrusion 4 can be enlarged when the intersections of the latching protrusion 4 are provided in two locations, which means that it is possible to reduce the peripheral length of the latching protrusion 4, so the latching of the inner stopper 6 to the container 1 can be further loosened. In the invention according to Claim 10, the force for pulling the pouring tube 5 can be concentrated further away from the pouring tube 5, and therefore the whole tearing process can be easily carried out. In the invention according to Claim 11, the inner stopper, which is in the form of a cap, can be easily removed from the container, while the sealing can be maintained until the initial use and the inner stopper can be opened with a great deal of ease.

[Brief Description of the Figures]

[Figure 1] is a half view in cross section of the inner stopper for a container, according to an exemplary embodiment of the present invention;

[Figure 2] is an oblique view showing the open state of the inner stopper for a container shown in Figure 1;

[Figure 3] is an oblique view of the inner stopper for a container, according to a second exemplary embodiment of the present invention;

[Figure 4] corresponds to Figure 3 and shows a third exemplary embodiment of the present invention;

[Figure 5] corresponds to Figure 3 and shows a fourth exemplary embodiment of the present invention;

[Figure 6] corresponds to Figure 3 and shows a fifth exemplary embodiment of the present invention;

[Figure 7] illustrates the action when the inner stopper for a container shown in Figure 2 is removed from the container;

[Figure 8] illustrates the action when the inner stopper for a container shown in Figure 5 is removed from the container;

[Figure 9] is a side view of an inner stopper for a container according to a sixth exemplary embodiment of the present invention; and

[Figure 10] is a half view in cross section of a conventional inner stopper for a container.

[Key to Symbols]

1 container
2 mouth part
3 engaging protrusion
4 latching protrusion
5 pouring tube
6 inner stopper
7 weakened line
7a end part
7b end part
8a weakened line
8b weakened line
9 intersection
10 base part
11 outer tube
12 inner tube
13 upper wall
14 side wall
15 hole
16 upper outer peripheral part
17 lower outer peripheral part
18 tearing groove
19 blocking wall
20 tearing member

[Figure 1]
[Figure 2]
[Figure 3]
[Figure 4]
[Figure 5]
[Figure 6]
[Figure 7]
[Figure 8]

[Figure 9]

[Figure 10]